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| APPLICATION NO.   | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 10/758,427  | 01/14/2004  | Xiaohong N. Duan     | 10541-1829          | 5655             |
| 57444   | 7590        | 02/14/2006           | EXAMINER            |                  |
| AUTOMOTIVE COMPONENTS HOLDINGS, LLC<br>c/o MACMILLAN SOBANSKI & TODD<br>One Maritime Plaza, Fourth Floor<br>720 Water Street<br>Toledo, OH 43604-1853 |             |                      | BONCK, RODNEY H     |                  |
|   |             | ART UNIT             | PAPER NUMBER        |                  |
|   |             | 3681                 |                     |                  |
| DATE MAILED: 02/14/2006   |             |                      |                     |                  |

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                             |                     |  |
|------------------------------|-----------------------------|---------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b>      | <b>Applicant(s)</b> |  |
|                              | 10/758,427                  | DUAN ET AL.         |  |
|                              | Examiner<br>Rodney H. Bonck | Art Unit<br>3681    |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 04 January 2006.  
 2a) This action is **FINAL**.                    2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1 and 4-7 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) Claim(s) \_\_\_\_\_ is/are allowed.  
 6) Claim(s) 1 and 4-7 is/are rejected.  
 7) Claim(s) \_\_\_\_\_ is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- 1) Notice of References Cited (PTO-892)  
 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)  
 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
 Paper No(s)/Mail Date \_\_\_\_\_.  
 4) Interview Summary (PTO-413)  
 Paper No(s)/Mail Date. \_\_\_\_\_.  
 5) Notice of Informal Patent Application (PTO-152)  
 6) Other: \_\_\_\_\_.

## **DETAILED ACTION**

The following action is in response to the amendment received January 4, 2006.

### ***Specification***

The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: The term “pressure control communication” does not appear to find clear support or antecedent basis in the description.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1 and 4-7 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 1 now calls for “a pressure control communication with a reservoir, the actuator and the clutch pack valve”. It is not clear what is referred to by “a pressure control communication”. In addition, “the clutch pack valve” lacks a proper antecedent basis in the claim.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1 and 7, insofar as definite, are rejected under 35 U.S.C. 103(a) as being unpatentable over Zanetel et al.('098) in view of Porter('654) and Gronau et al.('812). The Zanetel et al. device discloses a hydraulic coupling system comprising a pump 13 and a clutch assembly 25, the pump pressuring a fluid to engage the clutch and pumping fluid to cool the clutch. A valve 37,38 maintains fluid pumped to the actuator at a higher pressure than the pressure of the fluid pumped through the clutch for cooling. The Zanetel et al. device does not appear to show a controller, and does not appear to specify that clutch 25 is a multi-disk clutch. Porter, however, discloses a hydraulic

coupling system wherein the clutch 114 is a multi-disk clutch wherein actuation and cooling are controlled by pulse-width modulated valve 72 under the control of controller 68. It would have been obvious to provide a controller in Zanetel et al., the motivation being to control clutch actuation and cooling. Alternatively, it would have been obvious to control the pressure of the cooling fluid in Porter to be less than the clutch actuation pressure, as taught by Zanetel et al. Note, too, that Porter discloses the use of a gerotor pump. The Zanetel et al. patent does not appear to specify how the pump is driven, and, while Porter discloses that pump 78' can be electrically driven, there does not appear to be disclosure of transmitting pulse-width modulated signals to the pump from the controller. The Gronau et al. device is a hydraulic system wherein pulse-width modulated signals are sent to the electric drive 150 of the pump as well as to hydraulic circuit control valves. It would have been obvious to use a pulse-width modulated pump in Zanetel et al., as modified in view of Porter, or alternatively in Porter, as modified in view of Zanetel et al., the motivation being to provide continuous adjustable control of the pump delivery rate, as taught by Gronau et al.

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Zanetel et al.('098) in view of Porter('654) and Gronau et al.('812) as applied to claim 1 above, and further in view of Ackermann(US 2003/0089573 A1). Ackermann provides an accumulator in a hydraulic clutch actuation system to maintain fluid pressure in the clutch chamber and compensate for fluid leakage in the system. It would have been

obvious to similarly employ the accumulator 104 of Porter, the motivation being to prevent system deterioration from leakage.

***Allowable Subject Matter***

Claims 4 and 5 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

***Response to Arguments***

Applicants' arguments have been considered but are not persuasive with respect to claims 1, 6, and 7. Applicants argue that Zanetel does not disclose a multi-disc clutch. The clutch shown in Zanetel et al. is only schematically shown. Multi-disc clutches are well known in this environment, and Porter discloses a multi-disc clutch at 76. Applicants further maintain that Zanetel et al. does not provide higher pressure to the clutch than to the cooling circuit. The examiner disagrees. Zanetel et al. state that "restrictor 37 in the lubrication supply line 36 lowers the pressure of the hydraulic fluid in the lubrication supply line 36 from a system pressure". Thus, the system pressure for clutch actuation is higher. Applicants also point out that the Zanetel et al. device is only hydraulic with no pulse-width modulated signals. Zanetel et al. is not applied alone, however, but combined with the teachings of Porter and Gronau et al.

The rejection of claims 1, 6, and 7 are maintained. In view of the amendment to claim 1, all the claims are now rejected under 35 USC 112, second paragraph, as noted

above. After reconsideration, the rejection of claims 4 and 5 under 35 USC 103 is withdrawn.

***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rodney H. Bonck whose telephone number is (571) 272-7089. The examiner can normally be reached on Monday-Friday 7:00AM - 3:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Charles A. Marmor can be reached on (571) 272-7095. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Rodney H. Bonck  
Primary Examiner  
Art Unit 3681

rhb  
February 6, 2006